

Carbon dioxide and methane as greenhouse gases – GCSE Chemistry

1. No.2.4

Carbon monoxide is produced by the incomplete combustion of methane.

Balance the equation for the reaction.

[1 mark]

2. No.9

This question is about algae.

A student:

- placed algae in water containing dissolved carbon dioxide
- shone bright light on the algae.

Gas bubbles were collected as the algae photosynthesised.

Describe a test that would identify the gas collected.

Give the result of the test.

[2 marks]

Test _____

Result _____

Glucose is produced when algae photosynthesise.

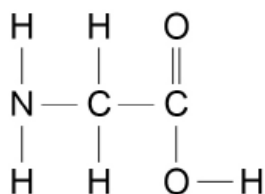
Name **two** naturally occurring polymers produced from glucose.

[2 marks]

_____ and _____

Figure 6 shows the displayed structural formula of an amino acid called glycine.

Figure 6



How many functional groups are there in the molecule in **Figure 6**?

[1 mark]

Tick (✓) **one** box.

1

☐

2

☐

3

☐

4

☐

Glycine reacts by condensation polymerisation to produce a polypeptide and one other substance.

Name the other substance produced.

[1 mark]

Scientists think that algae may have used gases in Earth's early atmosphere.

Algae need an element to produce the molecule in **Figure 6** which is **not** present in water or carbon dioxide.

Which **two** gases from Earth's early atmosphere could have provided this element?

[2 marks]

_____ and _____

The development and function of algae are controlled by a naturally occurring polymer.

Figure 7 represents the shape and structure of this polymer.

Figure 7



Describe the shape and structure of this polymer.

[3 marks]
